

CLAIMS

5 1. An electron source apparatus which has an
electron source and a counter substrate arranged to face
the electron source and in which the electron source has
on a substrate a plurality of row-direction wiring lines,
a plurality of column-direction wiring lines, insulating
layers formed at intersections between the row-direction
wiring lines and the column-direction wiring lines, and a
10 plurality of electron-emitting devices connected to the
row-direction wiring lines and the column-direction wiring
lines, and spacer for maintaining an interval between the
electron source and the counter substrate is arranged on
some of the row-direction wiring lines among the plurality
15 of row-direction wiring lines, characterized by
comprising:

a circuit for sequentially turning on the plurality
of row-direction wiring lines; and

20 a controlled current application circuit for
applying a predetermined controlled current to the
plurality of column-direction wiring lines.

2. An electron source apparatus which has an
electron source and a counter substrate arranged to face
the electron source and in which the electron source has
25 on a substrate a plurality of row-direction wiring lines,
a plurality of column-direction wiring lines, insulating

layers formed at intersections between the row-direction wiring lines and the column-direction wiring lines, and a plurality of electron-emitting devices connected to the row-direction wiring lines and the column-direction wiring lines, and spacers for maintaining an interval between the electron source and the counter substrate are arranged at different positions on the plurality of row-direction wiring lines, characterized by comprising:

a circuit for sequentially turning on the plurality of row-direction wiring lines; and

a controlled current application circuit for applying a predetermined controlled current to the plurality of column-direction wiring lines.

3. An electron source apparatus which has an electron source and a counter substrate arranged to face the electron source and in which the electron source has on a substrate a plurality of row-direction wiring lines, a plurality of column-direction wiring lines, insulating layers formed at intersections between the row-direction wiring lines and the column-direction wiring lines, and a plurality of electron-emitting devices connected to the row-direction wiring lines and the column-direction wiring lines, and spacer for maintaining an interval between the electron source and the counter substrate is electrically connected to some of the row-direction wiring lines among the plurality of row-direction wiring lines, characterized

by comprising:

a circuit for sequentially turning on the plurality of row-direction wiring lines; and

a controlled current application circuit for
5 applying a predetermined controlled current to the plurality of column-direction wiring lines.

4. An electron source apparatus which has an electron source and a counter substrate arranged to face the electron source and in which the electron source has
10 on a substrate a plurality of row-direction wiring lines, a plurality of column-direction wiring lines, insulating layers formed at intersections between the row-direction wiring lines and the column-direction wiring lines, and a plurality of electron-emitting devices connected to the
15 row-direction wiring lines and the column-direction wiring lines, and spacers for maintaining an interval between the electron source and the counter substrate are electrically connected to the row-direction wiring lines at different positions on the plurality of row-direction wiring lines,
20 characterized by comprising:

a circuit for sequentially turning on the plurality of row-direction wiring lines; and

a controlled current application circuit for
applying a predetermined controlled current to the
25 plurality of column-direction wiring lines.

5. The electron source apparatus according to any

one of claims 1 to 4, wherein a section of the spacer cut along a plane parallel to a plane in which the counter substrate spreads has a longitudinal direction in a direction in which the row-direction wiring line extends.

5 6. The electron source apparatus according to any one of claims 1 to 4, wherein one of the spacers is electrically connected to only one of the row-direction wiring lines.

10 7. The electron source apparatus according to any one of claims 1 to 4, wherein the spacer comprises a spacer substrate and a portion formed from a material having a resistivity lower than the spacer substrate.

15 8. An image forming apparatus comprising the electron source apparatus defined in any one of claims 1 to 4, and an image forming member for forming an image by irradiation of electrons from the electron source apparatus.

20 9. An image forming apparatus comprising the *a* electron source apparatus defined in ~~any one of claims~~ 5 ~~to 7~~ and an image forming member for forming an image by irradiation of electrons from the electron source apparatus.

add D1